ELK RIVER

WATERSHED

INVENTORY AND ASSESSMENT

This information is based on the

Elk River Watershed Inventory and Assessment

prepared by

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EXECUTIVE SUMMARY

The Elk River watershed headwaters originate in Big Sugar Creek near Seligman, Missouri and Little Sugar Creek near Bentonville, Arkansas. These two streams merge near Pineville, Missouri to form the Elk River. Other major tributaries are Indian Creek and Buffalo Creek. Lost Creek and Honey Creek of the Cherokees Lake basin (tributaries of Neosho/Grand River) are included in this watershed assessment. The lower portion of Elk River is inundated by, and forms, the Elk River Arm of Grand Lake O' the Cherokees.

The Elk River basin as covered by this document encompasses an area of 1,032 square miles and the corners of four states, Arkansas, Kansas, Missouri, and Oklahoma. Counties that are partially or entirely within the basin are Benton County, in Arkansas, Crawford County, in Kansas, Barry, McDonald, and Newton counties in Missouri, and Delaware and Ottawa counties in Oklahoma.

The basin is found in the Ozark Plateau physiographic region and further delineated as being entirely within the Springfield Plateau region. Caves, springs, and losing streams are found throughout the basin because of the soluble bedrocks (limestone and dolomite) that underlay the basin. These bedrocks also store large quantities of groundwater. The soils found in the basin are generally shallow, rocky, acidic, and low in fertility. The terrain is rolling and hilly, with localized relief of up to 400 feet.

The streams found in the basin are clear with predominantly chert gravel/cobble streambeds. Average gradient for all streams combined is about 10 feet per mile, but gradients range from less than three feet per mile to over 200 feet per mile. The Elk River is a sixth order stream for its entire length.

The Elk River basin is primarily rural. Land use is about evenly split between forest and pasture/grazing, with smaller amounts distributed among row crop and urban land uses. Animal agriculture is a major enterprise in the basin with McDonald, Newton, and Barry counties consistently ranking in the top five annually, for market value of livestock and poultry products in Missouri. Confined animal agriculture (primarily poultry) has grown explosively in the basin since the early 1980s. Waste management and disposal at these facilities, wastewater treatment and disposal at associated processing plants, and increasing pollutants in basin streams has become a concern in the Elk River basin.

Non-point source pollution in the basin comes from various sources including urban development and runoff, mining, land conversion from forest to pasture, free ranging livestock, channelization, road construction, and septic tanks. Point source pollution sources include sewage treatment plants, poultry processing plants, landfills, industrial discharges, and animal feeding operations.

The Elk River basin is included in the Ozark-Neosho aquatic community division. Streams tend to be very clear with rock and gravel substrates. Fish and other aquatic fauna unique to this area include redspot chub, bluntface shiner, cardinal shiner, southwestern mimic shiner, western slim minnow, Neosho madtom, Arkansas darter, Neosho orangethroat darter, redfin darter, channel darter, yellow mud turtle, Neosho midget crayfish, and Neosho mucket mussel.

Seventy species of fish have been collected from the Elk River basin in Missouri. There are no fish sample records from the time period 1965-1982 for the Elk River basin. Fifty-nine species were collected prior to 1982. Eleven of these species have not been collected since 1965. The channel darter has not been collected since 1946 and is believed to be extirpated in the basin. Sportfish commonly found in basin streams include smallmouth bass, largemouth bass, spotted bass, white and black crappie, rock bass, and channel catfish. Overall, the fish populations appear healthy, but declines in several species are apparent.

A diverse aquatic fauna including mussels, crayfish, and insects is found in the basin. There are several state listed species of concern including: Alabama lip-fern, wooly lip-fern, Ozark chinquapin, marine vine, low prickly pear, Virginia whitlow wort, soapberry, running buffalo clover, Ozark corn salad, chert pebblesnail, elktoe, Neosho mucket, scaleshell, purple lilliput, cave crayfish, bristly cave crayfish, Ozark cavefish, blue sucker, bluntface shiner, plains topminnow, southern brook lamprey, channel darter, ringed salamander, northern crawfish frog, wood frog, eastern collared lizard, great plains skink, yellow mud turtle, alligator snapping turtle, Texas horned lizard, Cooper's hawk, peregrine falcon, bald eagle, greater prairie-chicken, black-tailed jackrabbit, Indiana bat, and gray bat. The federally listed endangered species are running buffalo clover, peregrine falcon, Indiana bat, and gray bat. The federally threatened species listed for the Elk River basin are Ozark cavefish and bald eagle.